

# Service Manual

Portable Cassette Recorder  
**RS-460S RS-460SD**  
 (for England)

AC/battery Portable Stereo Cassette Recorder with  
 FM/AM/FM Stereo Radio Features 2 Built-in Condenser Microphones



## RS-460S MECHANISM SERIES

### Specifications (Catalog specifications for sales)

Power requirement:	AC; 90~109, 110~125, 200~219, 200~250 V, 50/60 Hz (RS-460S) AC; 240 V, 50 Hz (RS-460SD for England)	Input:	MIC; sensitivity 0.25 mV/applicable microphone impedance 200Ω~600Ω (recommended microphone RP-8135)
Motor:	Electrical governor motor	Output:	DC IN; 6 V EXT SP; 8Ω
Frequency response:	80~8,000 Hz		REMOTE; for start and stop at hand
Recording system:	AC bias	REC/PB connection:	5P DIN type
Operation:	Pushbutton operation with Auto-Stop mechanism	Speaker:	9 cm, (3-1/2") PM dynamic speaker
Tape speed:	4.8 cm/s, (1-7/8 ips)	Radio frequency range:	FM; 87.5~108 MHz AM; 525~1,605 kHz
Program time:	Approx. 90 seconds with C-60 cassette tape	Dimensions:	34.9 cm(W) × 25.1 cm(H) × 12 cm(D) 13-3/4"(W) × 9-7/8"(H) × 4-3/4"(D)
Track system:	4-track 2-channel stereo recording and playback	Weight:	3.3 kg, (7-1/4 lbs.)

Specifications are subject to change without notice for further improvement.

 **National Panasonic**

**Matsushita Electric Trading Co., Ltd.**  
 P.O. Box 288, Central Osaka Japan

# LOCATION OF CONTROLS AND COMPONENTS

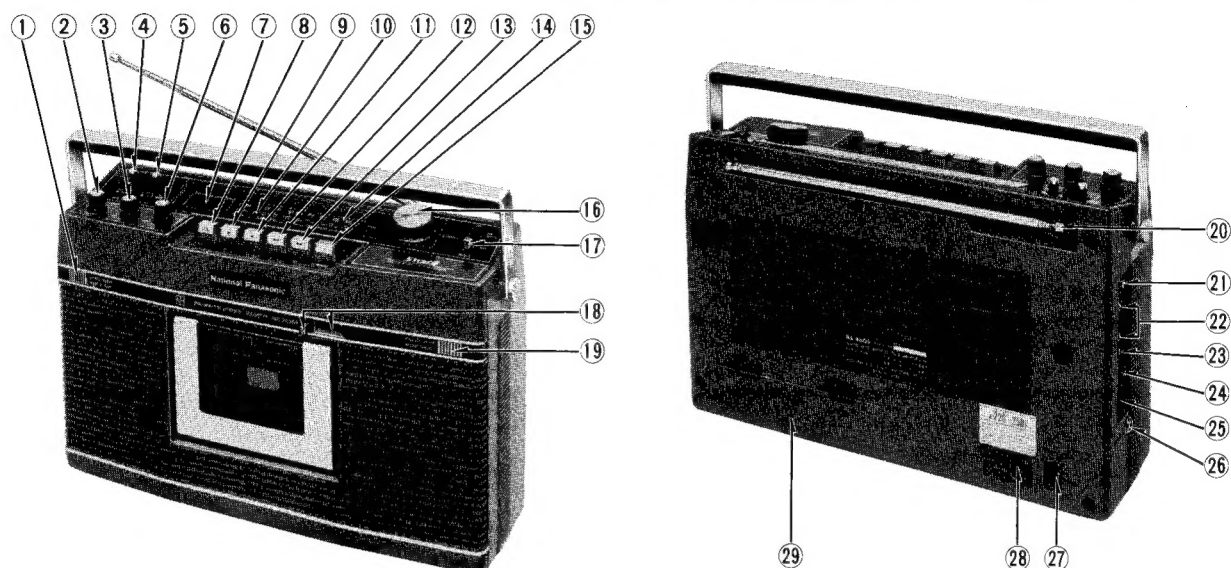
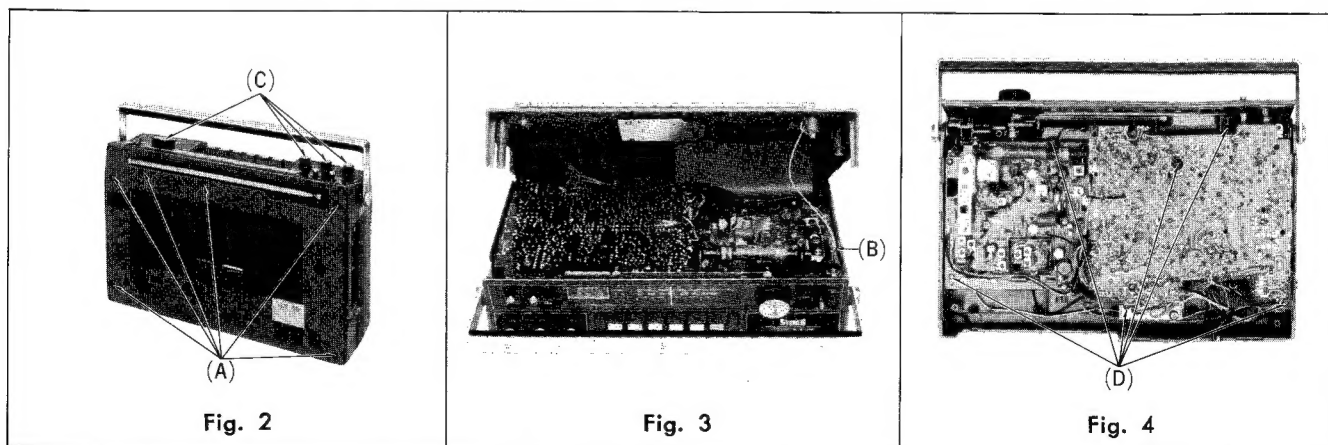


Fig. 1

- |                             |                                 |                                  |
|-----------------------------|---------------------------------|----------------------------------|
| ① Built-in microphone(left) | ⑪ Playback button               | ⑳ Monitor switch                 |
| ② Left volume control       | ⑫ Fast forward button           | ㉑ Microphone jacks               |
| ③ Right volume control      | ⑬ Rewind button                 | ㉒ Remote-control connection jack |
| ④ Mode selector             | ⑭ Rod antenna                   | ㉓ DIN cord connection jack       |
| ⑤ Tape/radio selector       | ⑮ Record button                 | ㉔ Car adaptor connection jack    |
| ⑥ Tone control              | ⑯ Tuning control                | ㉕ Headphones jack                |
| ⑦ Battery check/level meter | ⑰ Band selector                 | ㉖ Power cord connection socket   |
| ⑧ Ejection button           | ⑱ Tape counter and reset button | ㉗ Voltage selector               |
| ⑨ Stop button               | ㉙ Built-in microphone(right)    | ㉘ Battery compartment            |
| ⑩ FM stereo eye             | ㉚ Radio dial scale              |                                  |

## DISASSEMBLY INSTRUCTIONS



Procedure	To remove —	Remove —	Pcs.	Shown in fig. —
1	Bottom case	(A), (B)	(6), (1)	2, 3
2	Chassis	(C), (D)	(4), (6)	2, 4

# ADJUSTMENTS

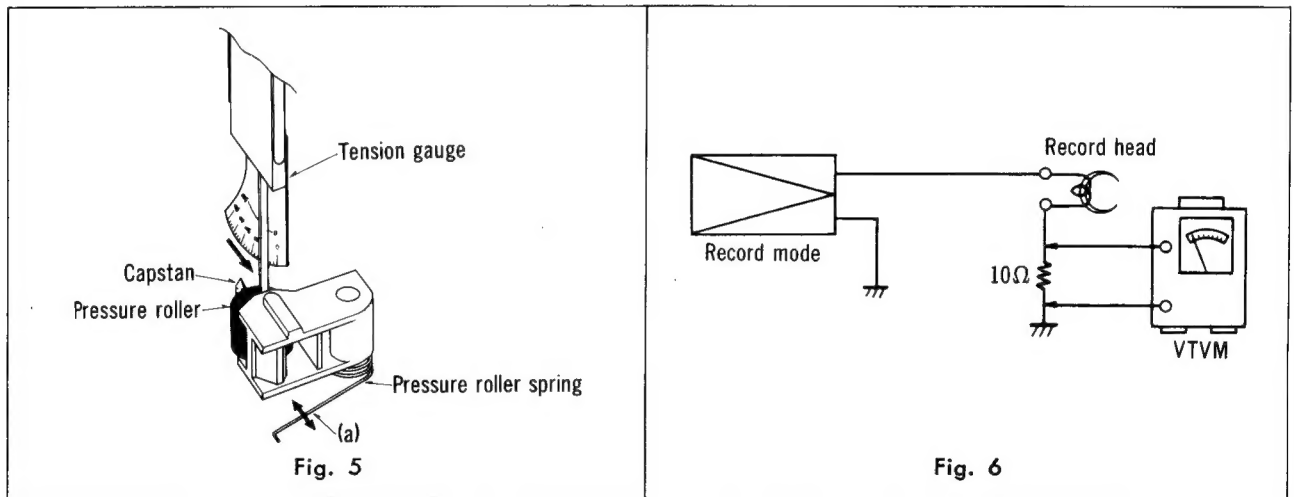
## MEASUREMENT AND ADJUSTMENT METHODS

### A. PRESSURE ROLLER ADJUSTMENT (See fig. 5)

1. Set into playback mode.
2. Connect the tension gauge to pressure roller lever and pull it in the direction of the arrow as shown in fig. 5.
3. Measure the tension at the moment when the pressure roller moves away from the capstan.  
Standard tension:  $390 \pm 60$  gr
4. If the tension is out of tolerance, bend the part (a) of the pressure roller spring in either direction shown by the arrow until the correct pressure is attained.

### B. RECORDING BIAS CURRENT ADJUSTMENT (See fig. 6)

1. Connect  $10\Omega$  resistor as shown in fig. 6.
2. Connect VTVM to both ends of  $10\Omega$  resistor.
3. Set into RECORD mode, read voltage on VTVM.  
Standard voltage:  $5.0 \pm 0.5$  mV.
4. If the voltage is out of tolerance, adjust control VR203 (L-CH) and VR303 (R-CH) (shown in adjustment parts location on page 6) until the VTVM indicates  $5.0 \pm 0.5$  mV.

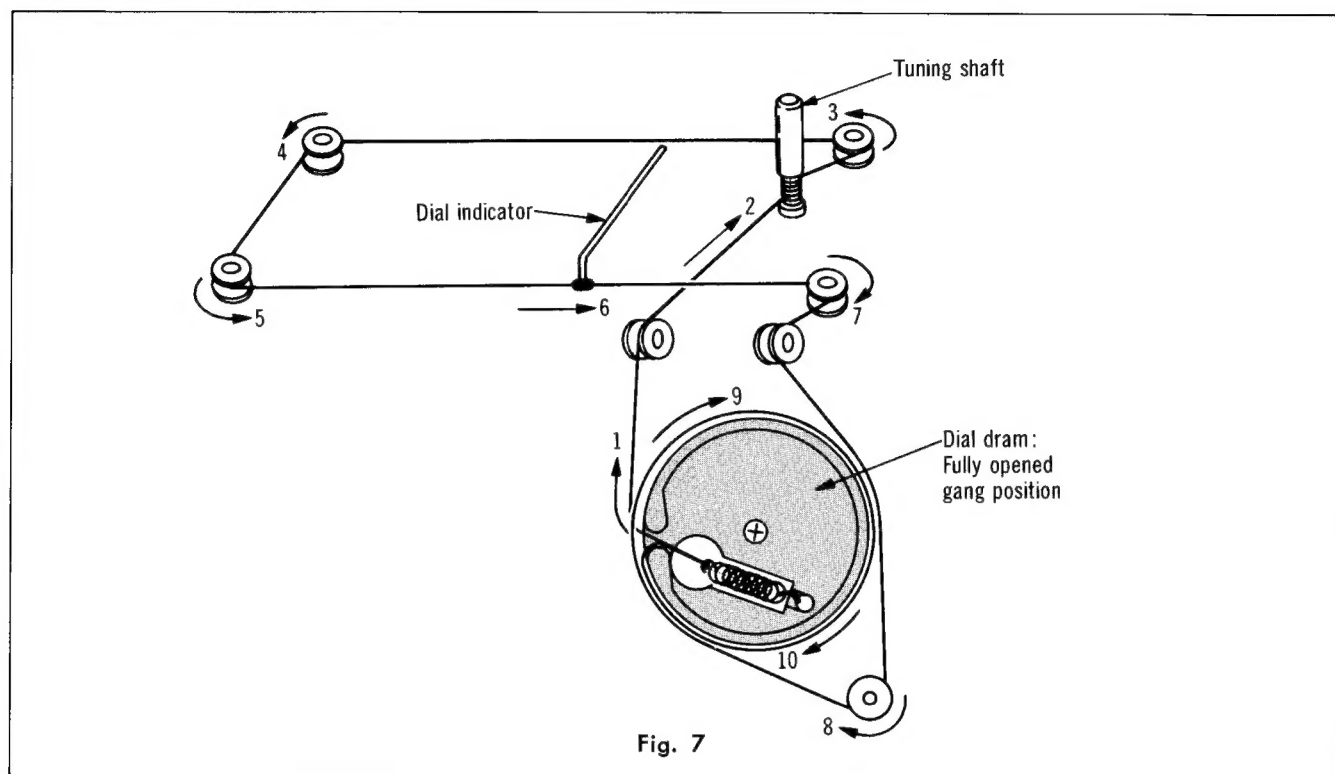


### C. OTHER SPECIFICATIONS FOR REFERENCE (NON ADJUSTABLE)

ITEM	VALUE	REMARKS
Takeup tension.	$55 \pm 15$ gr-cm	Use cassette torque meter (SRK-CT or RP-8063).
Tension of detect piece.	$50 \pm 10$ gr	—
Wow & flutter.	RMS: 0.4% or less	Use 3 kHz test tape (C-WAT).
Tape speed fluctuation.	$\pm 1.5\%$	Use 3 kHz test tape (C-WAT).
Standard recording input level.	1 kHz MIC: $-72 \pm 3$ dB	To obtain 0.7 V of headphone output level.
Bias oscillation frequency.	$29 \pm 5$ kHz	—
Erase current.	DC: $9 \pm 1.5$ mA	—

# ALIGNMENT INSTRUCTION OF RADIO

## DIAL THREADING



## AM IF & RF ALIGNMENT

Output of signal generator should be no higher than necessary to obtain an output reading. Set volume control to maximum. Maintain line voltage at 90~250 volts. Set band selector to AM.					
SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUSTMENT	REMARKS
Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz (400 Hz Mod.)	Point of non-interference. (on/about 600 kHz)	Output meter across EXT SP jack.	T108 (3rd IFT) T105 (2nd IFT) T103 (1st IFT) (See fig. 12)	Adjust for maximum output.
Fashion loop of several turns of wire and radiate signal into loop of receiver.	550 kHz (400 Hz Mod.)	550 kHz	Output meter across EXT SP jack.	L104 (OSC coil) L107 (ANT coil) (See fig. 12)	Adjust for maximum output.
Fashion loop of several turns of wire and radiate signal into loop of receiver.	1,500 kHz (400 Hz Mod.)	1,500 kHz	Output meter across EXT SP jack.	C161 (OSC trimmer) C160 (ANT trimmer) (See fig. 12)	Adjust for maximum output. Repeat steps (2) and (3).

**Note:** 1. Cement antenna bobbin with wax after completing alignment.  
2. Make certain that speaker system or dummy resistor (8Ω) is connected to the EXT SP jack when aligning.

## ALIGNMENT

### EQUIPMENT REQUIRED

Signal generator that provides 10.7 MHz marker.

Sweep generator that provides 10.7 MHz and 400 kHz sweep width.

### OSCILLOSCOPE

Set sweep selector of oscilloscope to EXTERNAL SWEEP.

Apply 60 Hz sweep signal from sweep generator to horizontal input terminals of oscilloscope.

Set band selector to FM.

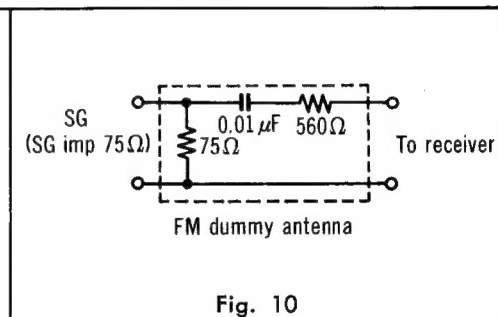
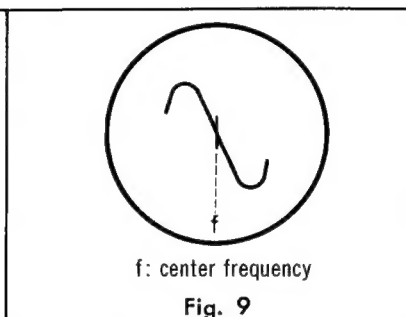
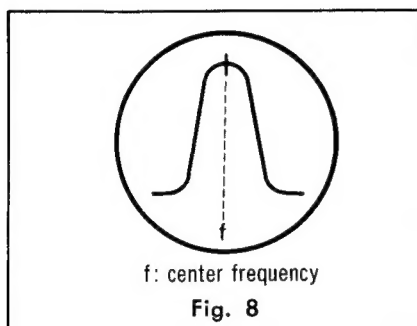
Set volume control to minimum.

Set tone control to treble.

Maintain line voltage at 90~250 volts.

**Note:** Before alignment of step 1 below unsolder lead between test point TP105 and  $\Delta$ , resolder it after alignment. (See fig. 12.)

	SWEEP GENERATOR COUPLING	SIGNAL GENERATOR COUPLING	RADIO DIAL SETTING	INDICATOR	ADJUSTMENT	REMARKS
1	High side thru. 0.001 $\mu$ F to TP101. (See fig. 12). Common to chassis.	High side thru. 0.001 $\mu$ F to TP101. (See fig. 12). Common to chassis.	Point of non-interference. (on/about 90 MHz)	Connect vert. amp. of scope to TP105. (See fig. 12). Common to chassis.	T106 (4th IF) T104 (FM 3rd IF) T102 (FM 2nd IF) T101 (FM 1st IF) (See fig. 12).	Adjust for maximum amplitude and proper linearity. (See fig. 8).
2	Same as step 1.	Same as step 1.	Point of non-interference. (on/about 90 MHz)	Connect vert. amp. of scope to TP103. (See fig. 12). Common to chassis.	T107 (See fig. 12).	To obtain proper linearity. (See fig. 9).



## FM RF ALIGNMENT

Output of signal generator should be no higher than necessary to obtain an output reading.

Set band selector to FM.

Set tone control to treble.

Set volume control to maximum.

Maintain line voltage at 90~250 volts.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUSTMENT	REMARKS
3	Connect to EXT FM antenna terminal through FM dummy antenna. (See fig. 10) Common to chassis.	90 MHz (400 Hz Mod.)	90 MHz	Output meter across EXT SP jack.	L103 (FM OSC coil) L101 (FM collector coil) (See fig. 12).	Adjust for maximum output.
4	Same as step 3.	106 MHz (400 Hz Mod.)	106 MHz	Output meter across EXT SP jack.	C159 (FM OSC trimmer) C158 (FM collector trimmer) (See fig. 12).	Adjust for maximum output. Repeat steps (3) and (4).

**Note:** Whenever three output response peaks are noted, adjust for center response.

## MULTIPLEX COIL AND SEPARATION ALIGNMENT

### EQUIPMENTS REQUIRED

Stereo modulator ..... Connect stereo modulator output to EXT Mod. terminal of signal generator.

Signal generator	Modulation rate by 19kHz pilot signal	8~10%
	Modulation rate by left signal	27%
	Output level	60 dB
	Frequency	Approx. 98 MHz

## Oscilloscope

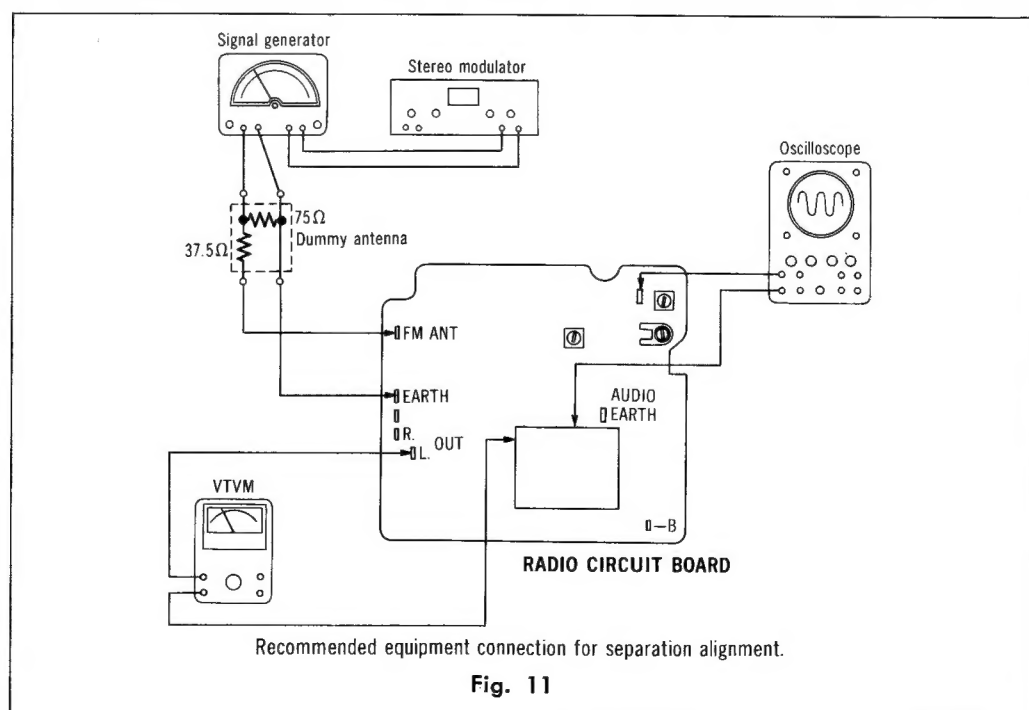
Dummy antenna

VTVM

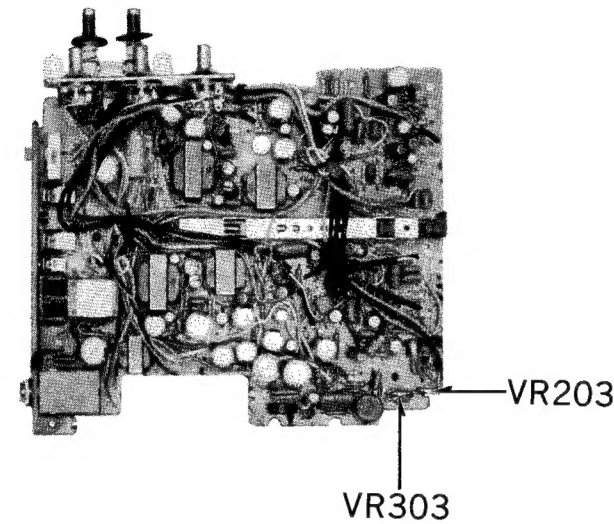
## PROCEDURE

Tuner ..... Band selector to FM, dial setting to approx. 98MHz, tone control to HIGH, Volume control should be no higher than necessary to obtain output reading.

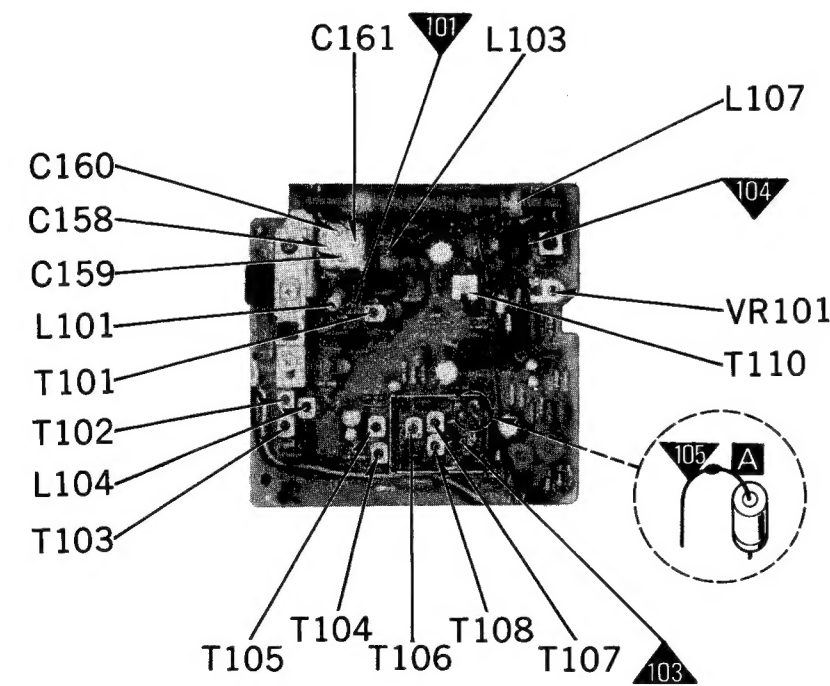
ITEM	SIGNAL SOURCE CONNECTION	EQUIPMENT CONNECTION	ADJUSTMENT	REMARKS
Adjustment of pilot signal.	98 MHz, 30 dB	TP104 (Refer to fig. 12)	T110 (Refer to fig. 12)	<ul style="list-style-type: none"> <li>* Set stereo (L+R) modulation to zero.</li> <li>* Measure pilot signal only, and adjust for maximum.</li> </ul>
Adjustment of separation.	98 MHz, 60 dB modulation by L signal. (Refer to fig. 11)	—	VR101 (Refer to fig. 12)	<ul style="list-style-type: none"> <li>* Then change the modulation by R signal only, and adjust semi-fixed variable resistor VR101 so that L-CH output becomes minimum.</li> <li>* Likewise modulate by L signal only, and adjust VR101 so that R-CH output becomes minimum.</li> </ul>
Measurement of stereo eye lighting level.	98 MHz	—	—	<ul style="list-style-type: none"> <li>* Adjust output of signal generator, and make sure that stereo eye lights at less than 34 dB.</li> </ul>



# ADJUSTMENT PARTS LOCATION



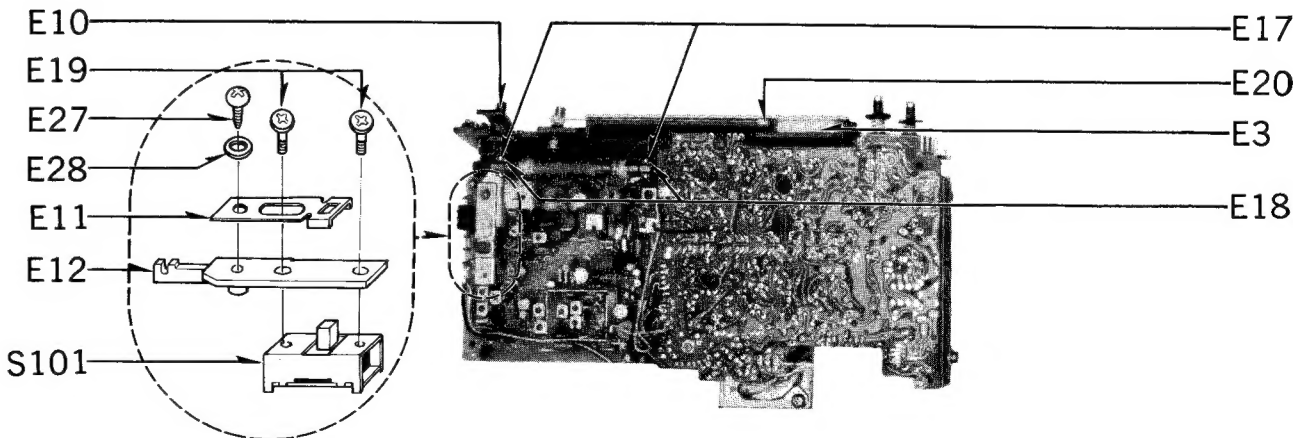
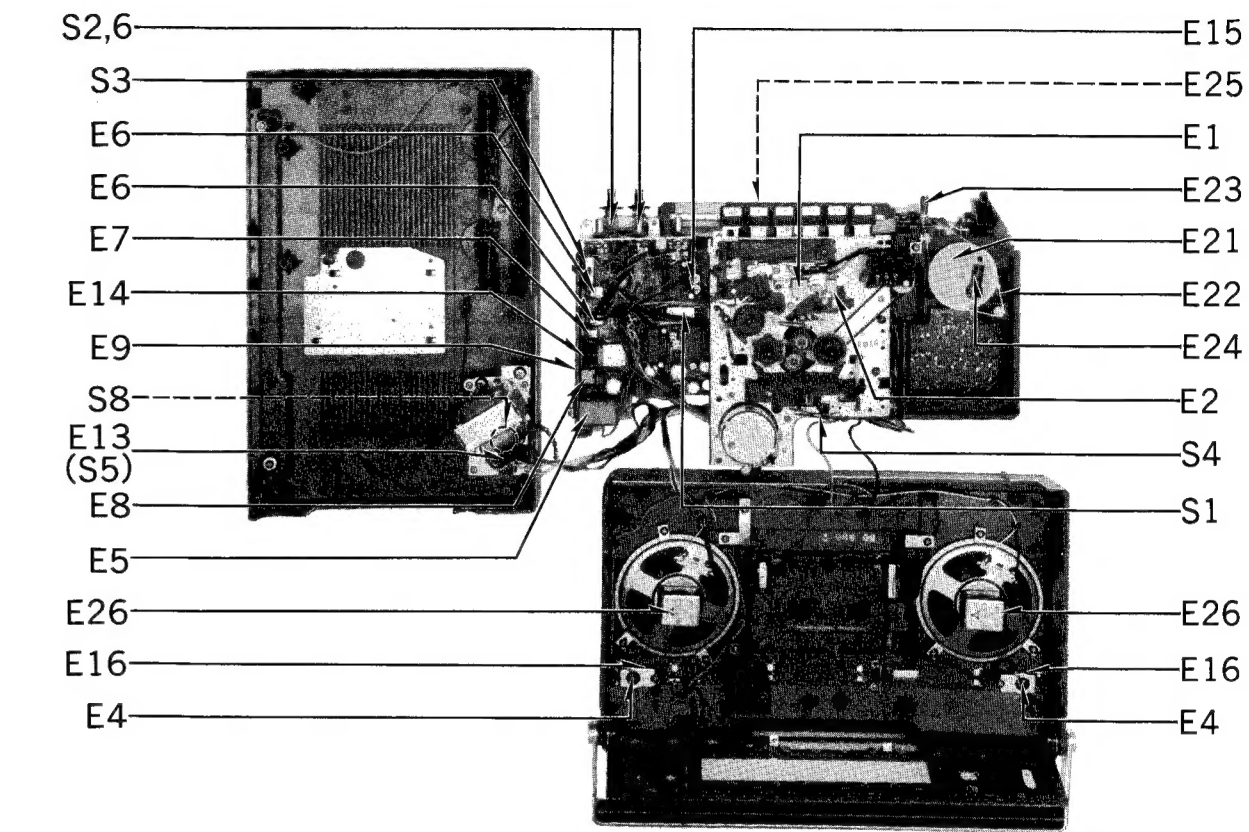
AUDIO CIRCUIT BOARD



RADIO CIRCUIT BOARD

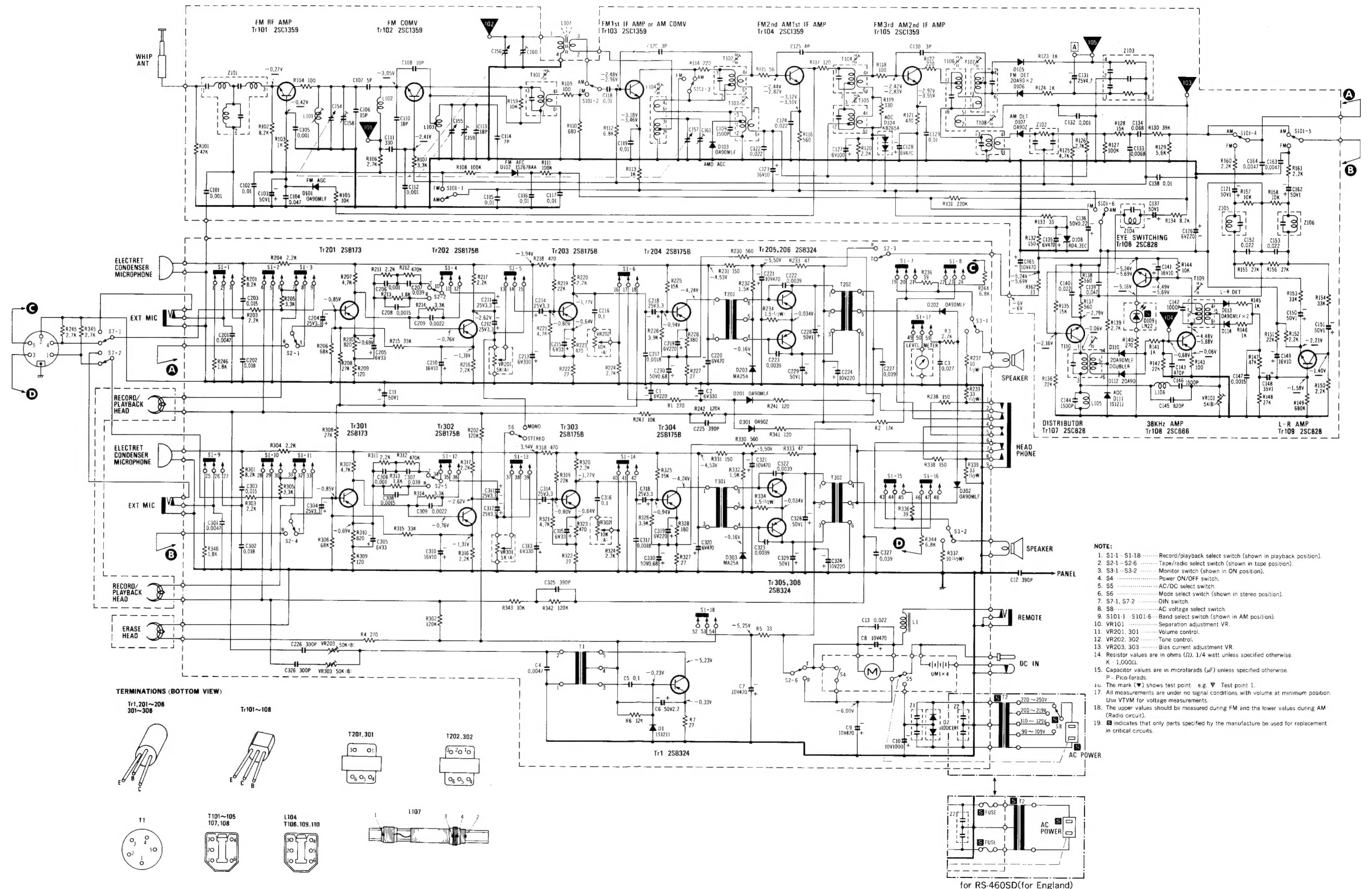
Fig. 12

# ELECTRICAL PARTS LOCATION



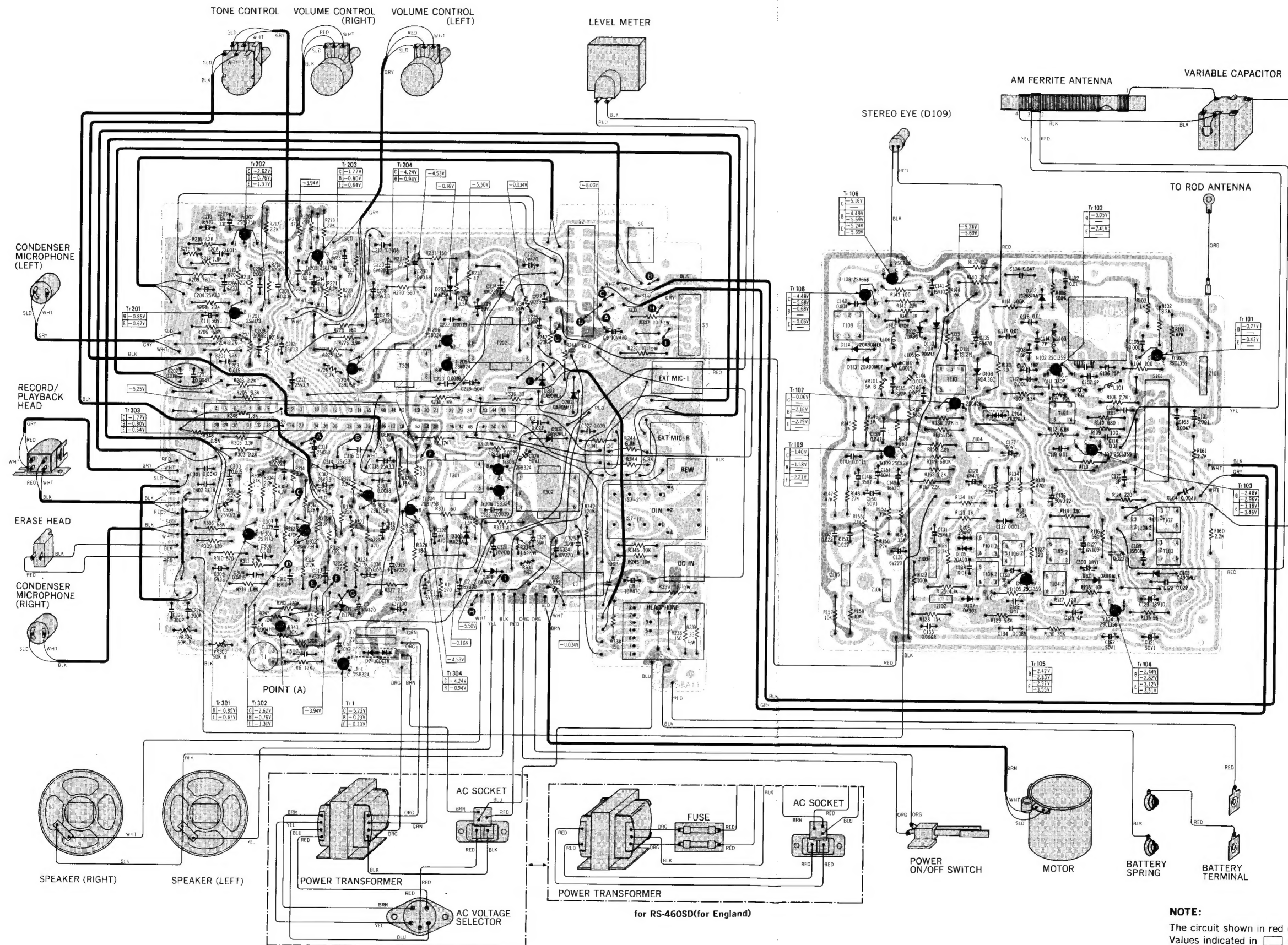


# SCHEMATIC DIAGRAM MODEL RS-460S, RS-460SD(for England)

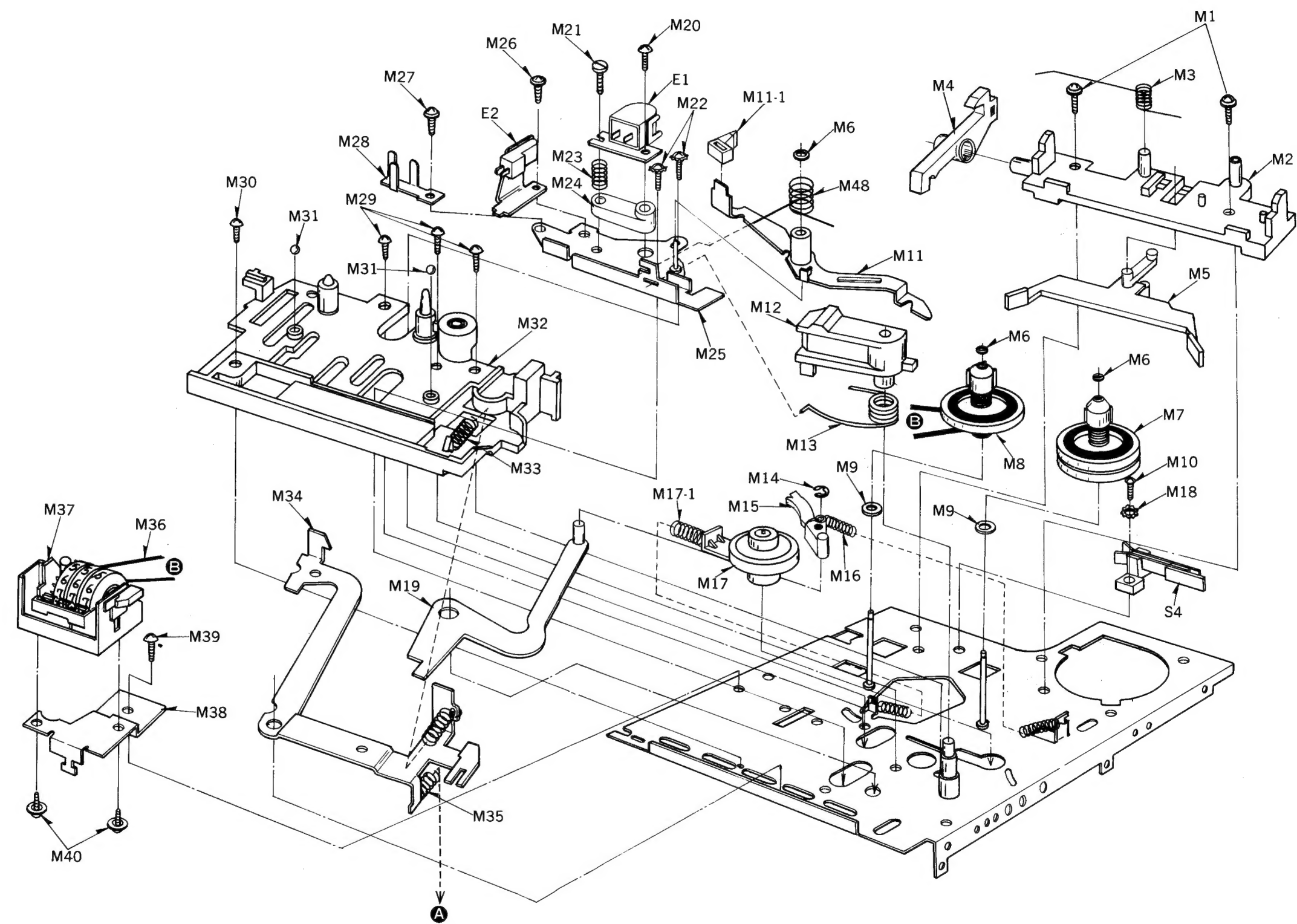


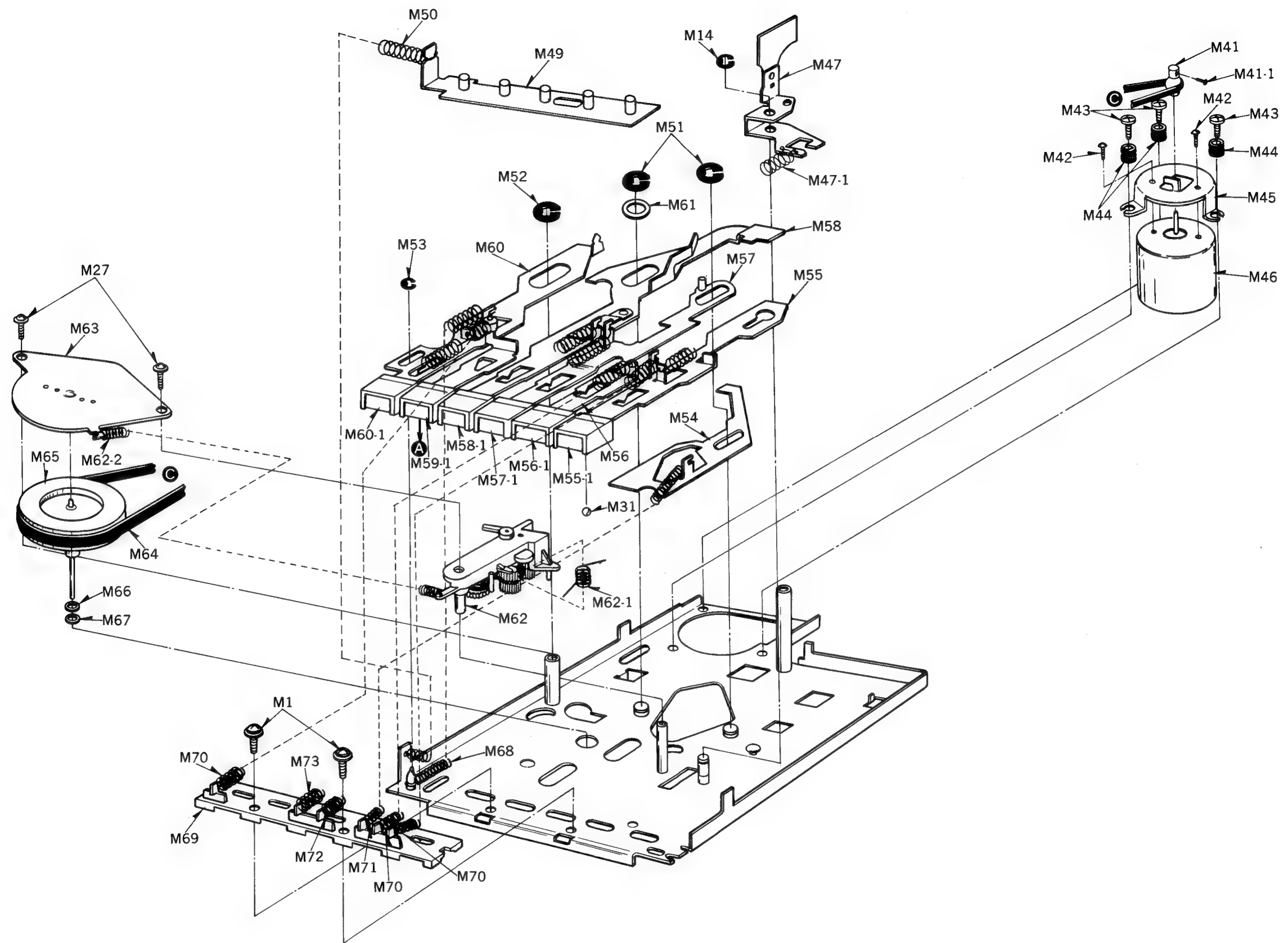


# WIRING CONNECTION DIAGRAM MODEL RS-460S, RS-460SD(for England)

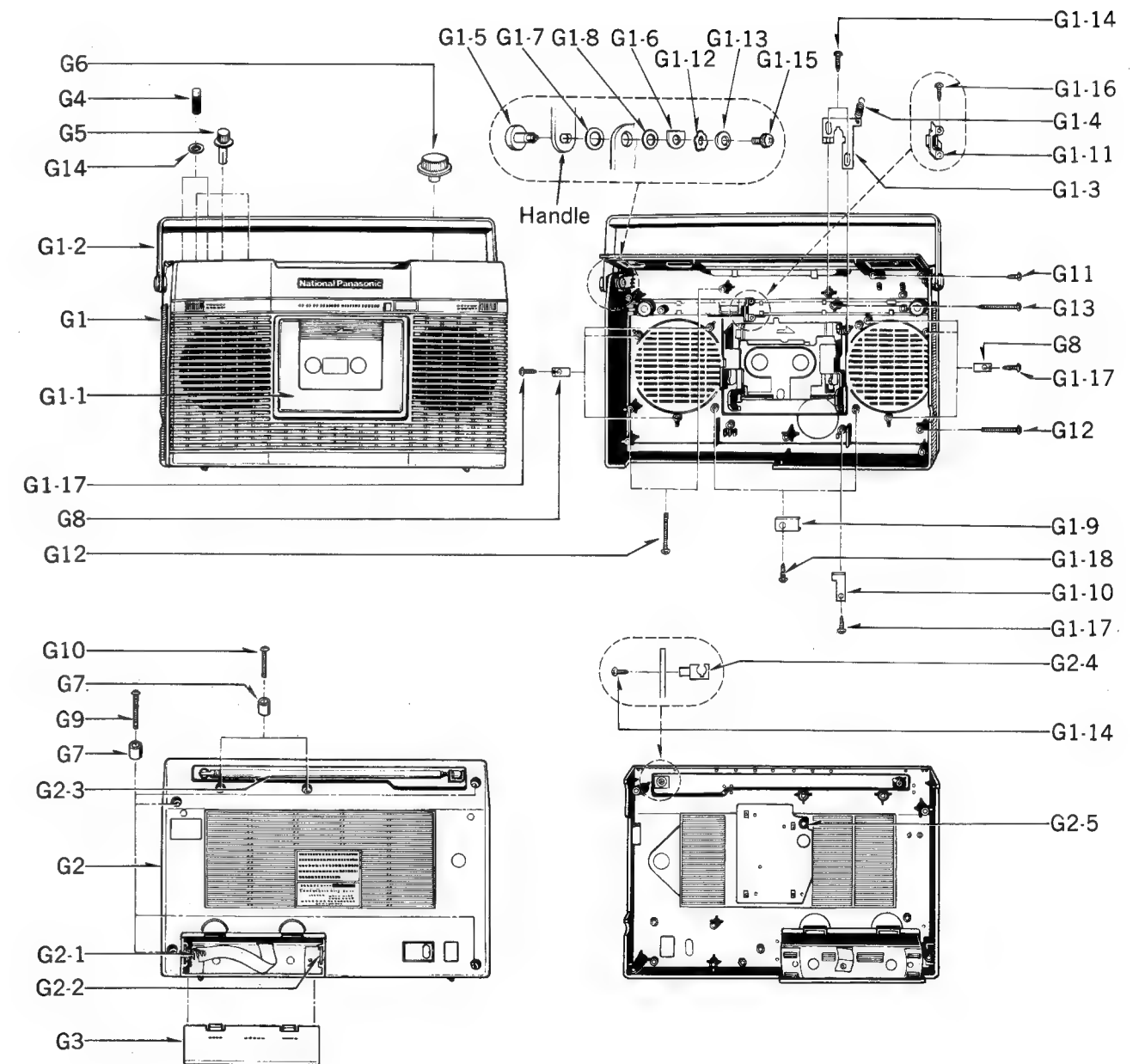


EXPLODED VIEWS





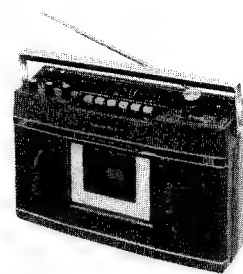
# CABINET PARTS



# REPLACEMENT PARTS LIST

MODEL RS-460S, RS-460SD  
(for England)

National Panasonic



RS-460S, RS-460SD (for England)

## NOTE:

1. Be sure to make your orders of replacement parts according to this list.
2. "N" in "Remarks" column indicates new parts.
3. SAFETY indicates that only parts specified by the manufacturer be used for replacement in critical circuits.
4. "※" mark indicates the parts for RQ-460SD (for England) only.

## NOTA:

1. Habrá que asegurarse que los pedidos de piezas de repuesto se hagan según esta lista.
2. "N" marcado en la columna "Remarks", quiere decir que las piezas son nuevas.
3. La inscripción SAFETY, que hay en algunas piezas, quiere decir que, en caso de recambiarlas, habrá que usar únicamente piezas especificadas y aprobadas por la compañía fabricante.

## NOTE:

1. Bien s'assutet de se conformer à la liste suivante pour les commandes de pièces de rechange.
2. "N", dans la colonne "Remarks", indique les pièces nouvelles.
3. Une pièce portant l'inscription SAFETY doit être remplacée uniquement par une pièce spécifiée par le fabricant.

## HIENWEIS:

1. Bestellen Sie Ihre Ersatzteile genau nach dieser Liste.
2. "N" in der "Remarks" Spalte bedeutet "neue Teile".
3. Der Vermerk SAFETY bedeutet, dass nur Ersatzteile, die vom Hersteller dazu bestimmt sind, verwendet werden dürfen.

## 按:

1. 關於代用零件之訂購，務請依照此表而行之為荷。
2. 「備考」(Remarks)一欄中之 "N" 形符號標記表示該零件為新品。
3. SAFETY 的標號表示，僅有那些由製造公司所指定及證明的零件，才能用來代換。

**RS-460S, RS-460SD (for England)**

Ref. No.	Part No.	Description	Pcs/ Set	Price (Per Pce.)		Remarks
		<b><u>MECHANICAL PARTS</u></b>				
M1	XYN26+C10	Screw $\oplus 2.6 \times 10$	4			COMMON
M2	QGG0044	Brake Guide	1			RQ-448FJS
M3	QBN1154	Brake Spring	1			"
M4	QBJ1787A	Erase Safety Lever	1			"
M5	QMR1392	Brake	1			RQ-514DS
M6	QWQ1124	Snap Washer	3			RQ-312S
M7	QXD0038	Takeup Reel Table Assembly	1			RQ-514DS
M8	QXP0373	Supply Reel Table Assembly	1			RS-260US
M9	QBJ3104	Washer	2			RQ-448FJS
M10	XYN2+5	Screw $\oplus 2 \times 5$	1			COMMON
M11	QXL0482	Auto Stop Detect Lever Assembly	1			RQ-448FJS
M11-1	QBJ1538	Auto Stop Detecting Piece	1			RQ-312S
M12	QXL0450A	Pressure Roller Lever Assembly	1			RQ-448FJS
M13	QBN1157	Pressure Roller Lever Spring	1			"
M14	XUC25FT	Stop Ring 2.5 $\phi$	2			COMMON
M15	QBJ1656	Auto Stop Drive Pawl	1			RQ-448FJS
M16	QBT1489M	Auto Stop Spring	1			"
M17	QXLK0115	Idler Lever Assembly	1			RQ-309AS
M17-1	QBT1619M	Idler Lever Spring	1			RQ-320S
M18	XWC2BFN	Lock Washer	1			COMMON
M19	QXL0830	Auto Stop Drive Lever Assembly	1			RQ-514DS
M20	XSN2D12	Screw $\ominus 2 \times 12$	1			COMMON
M21	QHQ1199	Head Adjustment Screw	1			RQ-320S
M22	XYN26+E6	Screw $\oplus 2.6 \times 6$	2			COMMON
M23	QBC1103A	Head Spring	1			RQ-514DS
M24	QMZ1097	Head Spacer	1			"
M25	QXK1721A	Head Base Plate Assembly	1			<b>N</b>
M26	XYN2+C4	Screw $\oplus 2 \times 4$	1			COMMON
M27	XYN26+C6	Screw $\oplus 2.6 \times 6$	3			"
M28	QTD1235	Head Wire Clamper	1			RQ-514DS
M29	XSN26+6	Screw $\oplus 2.6 \times 6$	3			COMMON
M30	XSN26+10	Screw $\oplus 2.6 \times 10$	1			"
M31	QDK1012	Steel Ball 2.5 $\phi$	3			RQ-448FJS



**RS-460S, RS-460SD (for England)**

Ref. No.	Part No.	Description	Pcs/ Set	Price (Per Pce.)		Remarks
M32	QXK1724A	Upper Base Plate Assembly	1			Ⓝ
M33	QBT1692D	Eject Lever Spring	1			RQ-448FJS
M34	QML2921A	Eject Lever	1			RQ-514DS
M35	QBT1679A	Cushion Spring	1			RQ-448FJS
M36	QDB0218	Counter Belt	1			RQ-514DS
M37	QDC0085	Tape Counter	1			"
M38	QMA2632A	Counter Angle	1			"
M39	XYN26 + C5	Screw $\oplus 2.6 \times 5$	1			COMMON
M40	XYN3 + C6S	Screw $\oplus 3 \times 6$	2			"
M41	QXP0498	Motor Pulley Assembly	1			RQ-305S
M41-1	XSN2 + 3	Screw $\oplus 2 \times 3$	1			COMMON
M42	XSN26 + 3	Screw $\oplus 2.6 \times 3$	2			"
M43	QMS1833	Screw	3			RQ-448FJS
M44	QBG1055A	Motor Rubber Cushion	3			"
M45	QMA2487A	Motor Angle	1			RQ-514DS
M46	MHI5R6CXPR	Motor	1			Ⓝ
M47	QXL0992	Record Lever Assembly	1			Ⓝ
M47-1	QBT1660DM	Record Lever Spring	1			RS-283S
M48	QBN1156	Auto Stop Detect Lever Spring	1			RQ-448FJS
M49	QXR0180	Lock Plate Assembly	1			Ⓝ
M50	QBT1673	Lock Plate Spring	1			RQ-448FJS
M51	XUC5FT	Stop Ring 5 $\phi$	2			COMMON
M52	XUC6FT	Stop Ring 6 $\phi$	1			"
M53	XUC3FT	Stop Ring 3 $\phi$	1			"
M54	QMR1307A	Fast Forward Rod-2	1			RQ-514DS
M55	QXR0181	Record Rod Assembly	1			Ⓝ
M55-1	QXB0387	Record Button	1			Ⓝ
M56	QXR0182	Rewind Rod Assembly	1			Ⓝ
M56-1	QXB0388	Rewind Button	1			Ⓝ
M57	QXR0185	Fast Forward Rod Assembly	1			Ⓝ
M57-1	QXB0389	Fast Forward Button	1			Ⓝ
M58	QXR0184A	Playback Rod Assembly	1			Ⓝ
M58-1	QXB0390	Playback Button	1			Ⓝ
M59	QXR0187	Stop Rod Assembly	1			Ⓝ
M59-1	QXB0391	Stop Button	1			Ⓝ

**RS-460S, RS-460SD (for England)**

Ref. No.	Part No.	Description	Pcs/ Set	Price (Per Pce.)		Remarks
M60	QXR0186	Eject Rod Assembly	1			N
M60-1	QXB0392	Eject Button	1			N
M61	QBK7130	Fiber Washer	1			RQ-320S
M62	QXL0451	Fast Forward Frame Assembly	1			RQ-309AS
M62-1	QBN1447	Gear Lever Spring	1			RQ-514DS
M62-2	QBT1485M	Fast Forward Lever Spring	1			RQ-448FJS
M63	QXH0225	Flywheel Retainer Assembly	1			N
M64	QDB0141	Capstan Belt	1			RQ-448FJS
M65	QXF0063	Flywheel Assembly	1			"
M66	QBJ3221	Washer	1			RQ-320S
M67	QBJ3220	"	1			"
M68	QBT1795DM	Pause Rod Spring	1			RQ-448FJS
M69	QBJ2086B	Lever Guide	1			RQ-514DS
M70	QBT1580DM	Stop Lever Spring	3			"
M71	QBT1486DM	Record Lever Spring	1			RS-450S
M72	QBT1484M	Fast Forward Lever Spring	1			RQ-432S
M73	QBT1536DMA	Playback Lever Spring	1			RQ-514DS
		<b><u>RESISTORS</u></b>				
R1	ERD14VJ271	Carbon Resistor 270Ω 1/4 W	1			
R2	ERD14TJ173	" 17KΩ 1/4 W	1			
R3	ERD14TJ272	" 2.7KΩ 1/4 W	1			
R4, 140	ERD14TJ271	" 270Ω 1/4 W	2			
R5, 133, 162	ERD14TJ330	" 33Ω 1/4 W	3			
R6	ERD14TJ123	" 12KΩ 1/4 W	1			
R7, 222, 227, 322, 327	ERD14TJ270	" 27Ω 1/4 W	5			
R101, 147	ERD14TJ473	" 47KΩ 1/4 W	2			
R102, 134, 201, 301	ERD14TJ822	" 8.2KΩ 1/4 W	4			
R103, 113, 123, 124, 141, 145, 146						
	ERD14TJ102	" 1KΩ 1/4 W	7			
R104, 109, 118, 143	ERD14TJ101	" 100Ω 1/4 W	4			
R105, 144, 157, 158, 243, 245, 343, 345						
	ERD14TJ103	" 10KΩ 1/4 W	8			
R106, 126, 139, 224, 324	ERD14TJ272	" 2.7KΩ 1/4 W	5			
R107, 205, 214, 305, 314	ERD14TJ332	" 3.3KΩ 1/4 W	5			

**RS-460S, RS-460SD (for England)**

Ref. No.	Part No.	Description	Pcs/ Set	Price (Per Pce.)		Remarks
R108, 111, 127	ERD14TJ104	Carbon Resistor 100K $\Omega$ 1/4W	3			
R110	ERD14TJ681	" 680 $\Omega$ 1/4W	1			
R112, 157, 158, 244, 344	ERD14TJ682	" 6.8K $\Omega$ 1/4W	5			
R114, 122	ERD14TJ221	" 220 $\Omega$ 1/4W	2			
R115	ERD14TJ560	" 56 $\Omega$ 1/4W	1			
R116, 137, 138, 230, 330	ERD14TJ561	" 560 $\Omega$ 1/4W	5			
R117, 209, 241, 309, 341	ERD14TJ121	" 120 $\Omega$ 1/4W	5			
R119	ERD14TJ331	" 330 $\Omega$ 1/4W	1			
R120, 150, 152, 160, 161, 203, 204, 216, 217, 220, 303, 304, 316, 317, 320						
	ERD14TJ222	" 2.2K $\Omega$ 1/4W	15			
R121, 218, 223, 318, 323	ERD14TJ471	" 470 $\Omega$ 1/4W	5			
R125, 207, 221, 307	ERD14TJ472	" 4.7K $\Omega$ 1/4W	4			
R128, 135, 225, 325	ERD14TJ153	" 15K $\Omega$ 1/4W	4			
R129	ERD14TJ562	" 5.6K $\Omega$ 1/4W	1			
R130	ERD14TJ393	" 39K $\Omega$ 1/4W	1			
R131	ERD14TJ224	" 220K $\Omega$ 1/4W	1			
R132, 231, 238, 331, 338	ERD14TJ151	" 150 $\Omega$ 1/4W	5			
R136, 142, 151, 219, 319	ERD14TJ223	" 22K $\Omega$ 1/4W	5			
R148, 155, 156, 208, 308	ERD14TJ273	" 27K $\Omega$ 1/4W	5			
R149	ERD14TJ684	" 680K $\Omega$ 1/4W	1			
R153, 154, 315	ERD14TJ333	" 33K $\Omega$ 1/4W	3			
R159	ERD14TJ103	" 10K $\Omega$ 1/4W	1			
R202, 242, 302, 342	ERD14TJ124	" 120K $\Omega$ 1/4W	4			
R206, 306	ERD14TJ683	" 68K $\Omega$ 1/4W	2			
R210, 240, 310, 340	ERD14TJ821	" 820 $\Omega$ 1/4W	4			
R211, 311	ERD14TJ222	" 2.2K $\Omega$ 1/4W	2			
R212, 312	ERD14TJ474	" 470K $\Omega$ 1/4W	2			
R215	ERD14VJ333	" 33K $\Omega$ 1/4W	1			
R213, 246, 313, 346	ERD14TJ182	" 1.8K $\Omega$ 1/4W	4			
R226, 326	ERD14TJ392	" 3.9K $\Omega$ 1/4W	2			
R228, 328	ERD14TJ181	" 180 $\Omega$ 1/4W	2			
R232, 332	ERD14TJ152	" 1.5K $\Omega$ 1/4W	2			
R233, 333	ERD14TJ470	" 47 $\Omega$ 1/4W	2			
R234, 334	ERD12FJ1R5	" 1.5 $\Omega$ 1/2W	2			
R236, 336	ERD14TJ390	" 39 $\Omega$ 1/4W	2			

**RS-460S, RS-460SD (for England)**

Ref. No.	Part No.	Description	Pcs/ Set	Price (Per Pce.)		Remarks
R237, 337	ERC12GM100	Solid Resistor 10 $\Omega$ 1/2W	2			
R239, 339	ERC12GM330	" 33 $\Omega$ 1/2W	2			
R321	ERD14VJ472	Carbon Resistor 4.7K $\Omega$ 1/4W	1			
		<b><u>VARIABLE RESISTORS</u></b>				
VR101	EVL43AA00B53	Semi-fixed Variable Resistor 5K $\Omega$ (B)	1			RS-272US
VR201, 301	EVHCMA091A53	Variable Resistor 5K $\Omega$ (A)	2			ⓑ
VR202, 302	EWKD0A016A14	" 10K $\Omega$ (A)	2			ⓑ
VR203, 303	EVL78AA00B54	Semi-fixed Variable Resistor 50K $\Omega$ (B)	2			ⓑ
		<b><u>CAPACITORS</u></b>				
C1, 126, 219, 319	ECEA6V220	Electrolytic Capacitor 220 $\mu$ F	4			
C2	ECEA6V330	" 330 $\mu$ F	1			
C3	ECQM05273MZ	Mylar Capacitor 0.027 $\mu$ F	1			
C4, 163, 164, 201, 301	ECQM05472MZ	" 0.0047 $\mu$ F	5			
C5, 216, 316	ECQM05104MZ	" 0.1 $\mu$ F	3			
C6	ECEA50Z2R2M	Electrolytic Capacitor 2.2 $\mu$ F	1			
C7, 8, 9, 221, 321	ECEA10V470	" 470 $\mu$ F	5			
C10	ECEA10V1000	" 1000 $\mu$ F	1			
C11, 103, 121, 137, 150, 151, 162, 228, 229, 328, 329						
	ECEA50V1L	" 1 $\mu$ F	11			
C12, 225, 325	ECQS1391JZ	Styrol Capacitor 390pF	3			
C13, 140, 152, 153	ECQM05223MZ	Mylar Capacitor 0.022 $\mu$ F	4			
C101, 105, 112	ECKD1H102PF	Ceramic Capacitor 0.001 $\mu$ F	3			
C102, 115, 116, 117, 119, 129, 138						
	ECKD1H103PF	" 0.01 $\mu$ F	7			
C104	ECKD1H473ZF	" 0.047 $\mu$ F	1			
C106	ECCD1H150KC	" 15pF	1			
C107	ECCD1H050CC	" 5pF	1			
C108	ECCD1H100FC	" 10pF	1			
C109	ECQS1152KZ	Styrol Capacitor 1500pF	1			
C110, 113	ECCD1H180KC	Ceramic Capacitor 18pF	2			
C111	ECCD1H331K	" 330pF	1			
C114	ECCD1H070DC	" 7pF	1			
C118	ECKD1H103MD	" 0.01 $\mu$ F	1			

**RS-460S, RS-460SD (for England)**

Ref. No.	Part No.	Description	Pcs/ Set	Price (Per Pce.)		Remarks
C120, 130	ECCD1H030C	Ceramic Capacitor 3pF	2			
C122, 124	ECKD1H223PF	" 0.022 $\mu$ F	2			
C123, 141, 149, 210, 310	ECEA16V10	Electrolytic Capacitor 10 $\mu$ F	5			
C125	ECCD1H040DC	Ceramic Capacitor 4pF	1			
C127	ECEA6V100	Electrolytic Capacitor 100 $\mu$ F	1			
C128, 135, 220, 320	ECEA6V470	" 470 $\mu$ F	4			
C130	ECCD1H030C	Ceramic Capacitor 3pF	1			
C131	ECEB25V4R7	Electrolytic Capacitor 4.7 $\mu$ F	1			
C132, 206, 306	ECQM05102MZ	Mylar Capacitor 0.001 $\mu$ F	3			
C133	ECQM05682MZ	" 0.0068 $\mu$ F	1			
C134	ECQM05683MZ	" 0.068 $\mu$ F	1			
C136	ECEA50ZR22M	Electrolytic Capacitor 0.22 $\mu$ F	1			
C139	ECQM05473MZ	Mylar Capacitor 0.047 $\mu$ F	1			
C142	ECQS1102KZ	Styrol Capacitor 0.001 $\mu$ F	1			
C143	ECQS1471KZ	" 470pF	1			
C144, 146	ECQS1152JZ	" 1500pF	2			
C145	ECQS1821JZ	" 820pF	1			
C147	ECQM05152MZ	Mylar Capacitor 0.0015 $\mu$ F	1			
C148	ECSZ235EF1Q	Tantalum Capacitor 1 $\mu$ F	1			
C165	ECEA10V470	Electrolytic Capacitor 470 $\mu$ F	1			
C202, 302	ECQM05183MZ	Mylar Capacitor 0.018 $\mu$ F	2			
C203, 303	ECQM05153MZ	" 0.015 $\mu$ F	2			
C204, 211, 212, 214, 218, 304, 311, 312, 314, 318						
	ECEA25V3R3	Electrolytic Capacitor 3.3 $\mu$ F	10			
C205, 215, 305, 315	ECEA6V33	" 33 $\mu$ F	4			
C207, 227, 307, 327	ECQM05393MZ	Mylar Capacitor 0.039 $\mu$ F	4			
C208, 308	ECQM05152MZ	" 0.0015 $\mu$ F	2			
C209, 309	ECQM05222MZ	" 0.0022 $\mu$ F	2			
C213, 313	ECEA6V330	Electrolytic Capacitor 330 $\mu$ F	2			
C217, 317	ECQM05182MZ	Mylar Capacitor 0.0018 $\mu$ F	2			
C222, 223, 322, 323	ECQM05392MZ	" 0.0039 $\mu$ F	4			
C224, 324	ECEA10V220	Electrolytic Capacitor 220 $\mu$ F	2			
C226, 326	ECQS1301JZ	Styrol Capacitor 300pF	2			
C230, 330	ECEA50ZR68M	Electrolytic Capacitor 0.68 $\mu$ F	2			

**RS-460S, RS-460SD (for England)**

Ref. No.	Part No.	Description	Pcs/ Set	Price (Per Pce.)		Remarks
		<b><u>VARIABLE CAPACITOR</u></b>				
C154~161	PVC2LX20T3L	Variable Capacitor	1			RS-451S
		<b><u>COMBINATION PARTS</u></b>				
Z1, 2	QCRFWA2	C-C Combination Part	2			Ⓝ
Z101	EXCFF88108	L-C Combination Part	1			Ⓝ
Z102	EXAF203Z471	C-R Combination Part	1			Ⓝ
Z103	EXA5DL04C	"	1			Ⓝ
Z104	QLH2011	L-C Combination Part	1			RS-451S
Z105, 106	QCRCFP1	"	2			Ⓝ
		<b><u>TRANSISTORS</u></b>				
Tr1, 205, 206, 305, 306	2SB324	Transistor	5			RQ-443S
Tr101, 102, 103, 104, 105	2SC1359	"	5			RQ-444S
Tr106, 107, 109	2SC828	"	3			RQ-320S
Tr108	2SA666	"	1			RS-264S
Tr201, 301	2SB173	"	2			RQ-443S
Tr202, 203, 204, 302, 303, 304						
	2SB175B	"	6			RQ-443S
		<b><u>DIODES</u></b>				
D1, 111	1S1211	Diode	2			RQ-445S
D2	10DC1R	"	1			"
D101, 103, 201, 202, 302	OA90MLF	"	5			RS-671US
D102	1S2687AA	"	1			RQ-445S
D104	KB265A	"	1			"
D105, 106, 112	20A90	"	3			"
D107, 301	OA90Z	"	2			COMMON
D108	RD4A	"	1			Ⓝ
D109	LN22	"	1			RQ-413S
D110, 113, 114	20A90MLF	"	3			Ⓝ
D203, 303	MA25A	"	2			RQ-444S



**RS-460S, RS-460SD (for England)**

Ref. No.	Part No.	Description	Pcs/ Set	Price (Per Pce.)		Remarks
		<b><u>TRANSFORMERS</u></b>				
T1	QLB0135A	Oscillator Transformer	1			RQ-432S
T2	QLP0736HWT	Power Transformer <b>SAFETY</b>	1			RS-460S only
T2※	QLPA20AKX	"	1			RS-460SD for England only
T101	RLI4M101	FM IFT	1			RQ-445S
T102	RLI4M302	"	1			<b>N</b>
T103	RLI2M203	AM IFT	1			RQ-445S
T104	RLI4M301	FM IFT	1			"
T105	RLI2M204	AM IFT	1			"
T106	RLI4M501	FM IFT	1			"
T107	RLI4M502	"	1			"
T108	RLI2M402	AM IFT	1			"
T109	RLM1C5K	MPX Coil	1			<b>N</b>
T110	RLM1C20	"	1			<b>N</b>
T201, 301	QLA0122	Input Transformer	2			RQ-432S
T202, 302	QLA0360	Output Transformer	2			"
		<b><u>COILS</u></b>				
L1	QLPK0007	Choke Coil	1			RQ-309AS
L101	RLD4N5	FM Collector Coil	1			RQ-445S
L102	RLQY75S5	RF Choke Coil	1			"
L103	RL04Y53	FM Oscillator Coil	1			"
L104	ELL7S710B	AM Oscillator Coil	1			"
L105, 106	RLM1X1Y	Choke Coil	2			<b>N</b>
L107	ELR10B0057	AM Ferrite Antenna	1			RQ-445S
		<b><u>SWITCHES</u></b>				
S1	QSS1201T	Slide Switch (Record/Playback Selector)	1			<b>N</b>
S2, 6	QSWY201H	Push Switch (Tape/Radio, Mono/Stereo Selector)	1			<b>N</b>
S3	QSS1160A	Slide Switch (Monitor)	1			RQ-235TS
S4	QSB0169M1	Leaf Switch (Power ON/OFF)	1			RQ-443S
S5	Refer to E13	AC/DC Select Switch	(1)			
S7	Refer to E14	DIN Switch	(1)			
S8	QSR0004B	Rotary Switch (AC Voltage Selector) <b>SAFETY</b>	1			RS-460S only

**RS-460S, RS-460SD (for England)**

Ref. No.	Part No.	Description	Pcs/ Set	Price (Per Pce.)		Remarks
S101	QSS6207T	Slide Switch (Band Selector)	1			Ⓝ
		<b><u>ELECTRICAL PARTS</u></b>				
E1	WY435Z	Record/Playback Head	1			RS-281S
E2	QWY2119	Erase Head	1			RQ-309AS
E3	QSL1064R	Level Meter	1			Ⓝ
E4	WM033T102A	Built-in Microphone	2			Ⓝ
E5	QJA0245	Headphone Jack	1			Ⓝ
E6	QJA0125	M3 Jack (MIC)	2			RQ-443S
E7	QJA0126	M2 Jack (REMOTE)	1			"
E8	QJA0137HN	DC IN Jack	1			RQ-445S
E9	QGJK0046	Jack Plate	1			Ⓝ
E10	QESK0029	Band Select Button	1			Ⓝ
E11	QMAK0067	Switch Angle-A	1			Ⓝ
E12	QKJK1023	Switch Angle-B	1			Ⓝ
E13	QJS0316H	AC Socket with S5 <b>SAFETY</b>	1			RS-460S only
E13※	QJS0320	"	1			RS-460SD for England only
E14	QJS0743	DIN Jack	1			RS-457S
E15	QTH1033	Heat Sink (for Tr205, 206, 305, 306)	4			RQ-312S
E16	QBKG0041	Microphone Cover	2			Ⓝ
E17	QTTK0050	AM Bar Antenna Retainer	2			Ⓝ
E18	QBG1165	Bar Antenna Rubber Cushion	2			RQ-443S
E19	QHQ1203	Step Screw	2			Ⓝ
E20	QDP1477	Roller	7			Ⓝ
E21	QTQ0023	Dial Drum	1			Ⓝ
E22	RDZ053	Dial Rope	1			RQ-443S
E23	QXS1064	Tuning Shaft Assembly	1			Ⓝ
E24	QBT1531	Dial Spring	1			RQ-442S
E25	QKTK0026	Indicator	1			Ⓝ
E26	EAS9P70SF	Speaker	2			RQ-309AS
E27	XTN3+6	Tapping Screw $\oplus 3 \times 6$	1			COMMON
E28	XWG3	Flat Washer	1			"
E29※	QTWK0006A	AC Socket Cover	1			RS-460SD for England only
E30※	XBAQ050026	Fuse 0.5A <b>SAFETY</b>	2			"
E31※	QTF1020	Fuse Holder	1			"

**RS-460S, RS-460SD (for England)**

Ref. No.	Part No.	Description	Pcs/ Set	Price (Per Pce.)		Remarks
		<b><u>CABINET PARTS</u></b>				
G1	QYBK0166W	Main Body Case Assembly (Without Speaker)	1			N
G1-1	QYFK0049	Cassette Lid Assembly	1			N
G1-2	QYHK0013	Handle Assembly	1			N
G1-3	QKJK1021	Eject Lever	1			N
G1-4	QBT1692	Eject Lever Spring	1			RQ-448FJS
G1-5	QMN8010	Handle Shaft	2			N
G1-6	QMFK0028	Handle Holding Plate	2			N
G1-7	QBWK2002	Handle Washer	2			N
G1-8	QBJ3307	Washer	2			N
G1-9	QMFK0029	Cassette Lid Holder	2			N
G1-10	QBPk0063	Cassette Lid Pressure Spring	1			N
G1-11	QXB0356A	Counter Button Assembly	1			N
G1-12	QWQK0002	Wave Washer	2			N
G1-13	XWM3FY	Spacer	2			COMMON
G1-14	XTW3+8FY	Screw $\oplus 3 \times 8$	3			"
G1-15	XYN3+C6FYS	Screw $\oplus 3 \times 6$	3			"
G1-16	XTN26+6FY	Screw $\oplus 2.6 \times 6$	1			"
G1-17	XTN3+8FY	Screw $\oplus 3 \times 8$	7			"
G1-18	XTN3+6FY	Screw $\oplus 3 \times 6$	2			"
G2	QYCK0117	Bottom Case Assembly	1			RS-460S only
G2※	QYCK0112	"	1			RS-460SD for England only
G2-1	QJB0016	Battery Spring	2			RS-451S
G2-2	QJB0042	Battery Terminal	2			"
G2-3	XEARCR228DCS	Rod Antenna	1			RQ-443S
G2-4	QKJK1020	Rod Antenna Retainer	1			N
G2-5	QBC1269	Earth Spring	1			N
G3	QYFK0050	Battery Cover Assembly	1			N
G4	QXBK0073	Push Button Assembly	2			N
G5	QYT0386	Volume Knob Assembly	3			N
G6	QYT0388	Tuning Knob Assembly	1			N
G7	QMZ1101	Spacer	6			RQ-448FJS
G8	QKT1172	Speaker Holding Metal	6			RS-451S
G9	XTN3+40FV	Screw $\oplus 3 \times 40$	4			COMMON

## RS-460S, RS-460SD (for England)

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